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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,819	12/15/2005	Gerard Laslaz	05165	6413
23338 7590 06/03/2008 DENNISON, SCHULTZ & MACDONALD 1727 KING STREET SUITE 105 ALEXANDRIA, VA 22314				
EXAMINER MORILLO, JANEL COMBS				
ART UNIT		PAPER NUMBER		
1793				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/560,819

**Applicant(s)**

LASLAZ ET AL.

**Examiner**

Janelle Morillo

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8, 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamamura et al (US 4,163,266).

Tamamura teaches a cast Al-Si alloy comprising (in wt%):

8-15% Si  
1-4% Cu  
0.05-0.6% Mg  
-0.15% Ni  
-0.15% Mn  
-0.15% Ti  
-0.15% Zr  
-0.7% Fe  
-0.15% Cr  
balance aluminum

(see Tamamura at abstract, column 6 lines 55-59), which overlaps the presently claimed ranges or maximum amounts of Si, Cu, Ni, Mn, Ti, Zr, Fe, Cr, Zn, and V (cl. 1-8), overlaps Mg (cl. 1), touches the boundary of the presently claimed range of Mn (cl. 10), and is a close approximation of the presently claimed range of Mg (cl. 2). Because Tamamura teaches an overlapping/close approximation of the presently claimed alloying ranges, then substantially the same 'high creep resistance' is expected, as for the claimed alloy. The examiner asserts that where the claimed and prior art products are identical or substantially identical in structure or composition, or are

produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims (such as creep resistance) are necessarily present. Additionally, the examiner points out the term 'high creep resistance' is a relative term, and the alloy taught by the prior art is held to meet the scope of 'high' by virtue of substantially the same claimed composition. Though Tamamura does not teach mold casting per se, Tamamura does teach a process of continuously casting (with a mold/ substrate), which meets said casting limitation (see below discussion of wrought vs. foundry products). Applicant has not shown the instant product by process is materially different from the product by process taught by the prior art.

Overlapping ranges have been held to be a prima facie case of obviousness, see MPEP § 2144.05. It would have been obvious to one of ordinary skill in the art to select any portion of the range, including the claimed range, from the broader range disclosed in the prior art, because the prior art finds that said composition in the entire disclosed range has a suitable utility. Additionally, "The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages," *In re Peterson*, 65 USPQ2d at 1379 (CAFC 2003). Because Tamamura teaches an Al-Si alloy that overlaps or touches the boundary of the presently claimed alloying ranges, it is held that Tamamura has created a prima facie case of obviousness of the presently claimed invention.

Concerning claims 11 and 12, though Tamamura does not specify forming said alloy into an insert for a hot part (cl. 11) or a cylinder head (cl. 12). It would have been obvious to one of ordinary skill in the art to have formed the Al-Si alloy taught by Tamamura into an insert for a hot part (cl. 11) or a cylinder head (cl. 12), because Tamamura teaches said Al-Si alloy has excellent wear resistance (examples).

3. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tamamura et al (US 4,163,266) further in view of "Aluminum and Aluminum Alloys" p 45 or GB 605,282.

Tamamura is discussed in paragraphs above. Tamamura does not teach the addition of 0.04-0.20% V. However, "Aluminum and Aluminum Alloys" teaches that V is added to aluminum in order to raise the recrystallization temperature and for grain refinement. GB'282 teaches that 0.05-0.3% V is added as a grain refiner to Al-Si alloys (page 1 line 47-54). It would have been obvious to one of ordinary skill in the art to add V as a grain refiner/ in order to raise the recrystallization temperature, of the Al-Si alloy taught by Tamamura, because the prior art teaches V is added for the predictable purpose of grain refinement.

#### ***Response to Amendment/Arguments***

4. In the response filed on February 27, 2008 applicant amended claims 1-12, and submitted various arguments traversing the rejections of record. The examiner agrees that no new matter has been added.

5. Applicant's argument that the present invention is allowable over the prior art of record because the prior art does not teach or suggest the Mg range in instant claim 2 has not been found persuasive. A prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected

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them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (Court held as proper a rejection of a claim directed to an alloy of “having 0.8% nickel, 0.3% molybdenum, up to 0.1% iron, balance titanium” as obvious over a reference disclosing alloys of 0.75% nickel, 0.25% molybdenum, balance titanium and 0.94% nickel, 0.31% molybdenum, balance titanium.), see MPEP 2144.05. When an invention is defined by providing ranges for the amount of the various components, a *prima facie* case of obviousness arises when the ranges of a claimed composition overlap the ranges disclosed in the prior art. See *In re Peterson*, 315 F.3d 1325, 1329 (Fed. Cir. 2003); *In re Geisler*, 116 F.3d 1465, 1469, 1469 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578 (Fed. Cir. 1990); *In re Malagari*, 499 F.2d 1297, 1303 (CCPA 1974). Where the “claimed ranges are completely encompassed by the prior art, the conclusion [that the claims are *prima facie* obvious] is even more compelling than in cases of mere overlap.” *Peterson*, 315 F.3d at 1330. Even without complete overlap of the claimed range and the prior art range, a minor difference shows a *prima facie* case of obviousness. *Haynes Int'l v. Jessup Steel Co.*, 8 F.3d 1573, 1577 n.3 (Fed. Cir. 1993). In the instant case, a *prima facie* case of obviousness has been established because 0.05% Mg taught by the prior art is held to be a close approximation (and expected to have substantially the same properties) of the claimed maximum of less than 0.03% Mg (i.e. 0.0299%, etc.).

6. Concerning applicant's arguments that cast aluminum alloy products are distinctly different from wrought aluminum alloy products, the examiner acknowledges that wrought alloys (initially ingot cast, then deformed by working, grain structure typically deformed/elongated) and foundry/cast alloys (typically cast into intricate shapes by die casting, mold casting, sand casting, etc. and maintains substantially equiaxed grain structure) have

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developed a separate status in the art (see aluminum association designations for commercial wrought or cast aluminum alloys). However, the presently stated claims do not clearly define the instant alloy over the cast and subsequently worked alloys of the prior art (i.e. the instant claims do not state a microstructure, or other quality to clearly define/distinguish the product by process). As stated above, Tamamura teaches said alloy is continuously cast (column 3 lines 40-41), and further processed by plastic working. The instant claims are drawn to casting in a mold. Though Tamamura does not teach mold casting per se, Tamamura does teach a process of continuous casting (with a mold/ substrate), which meets said casting limitation. Alternatively, applicant has not shown the instant product by process is materially different than that taught by the prior art of record.

Once a reference teaching product appearing to be substantially identical is made the basis of a rejection, and the examiner presents evidence or reasoning tending to show inherency, the burden shifts to the applicant to show an unobvious difference. "[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the PTO's inability to manufacture products or to obtain and compare prior art products." *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)), see MPEP 2112. Applicant has not clearly shown an unobvious difference between the instant invention and the prior art's product.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Morillo whose telephone number is (571) 272-1240. The examiner can normally be reached on 7:30 am- 4:00 pm Mon-Wed.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/  
Supervisory Patent Examiner, Art Unit  
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/J. M./



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May 28, 2008